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Pautler et al.

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[54] **METHOD AND APPARATUS FOR DETECTING A DATA SIGNAL INCLUDING REPEATED DATA WORDS**

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[58] **Field of Search** ..... 370/106, 108; 375/94, 375/95, 96, 106, 111, 114, 118, 119; 371/42, 46, 69; 343/5 DP; 364/486, 514, 574, 575, 728; 365/233; 360/5, 7

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[57] **ABSTRACT**

A method and detector are described for detecting a data signal including at least three repeated data words each preceded by a Barker word. The detector includes a microcomputer that is responsive to interrupt and correlation programs for receiving and timewise correlating the repeated data words in the data signal. Upon detection of each Barker word, the microcomputer stores the following data word and measures the elapsed time interval between data words by measuring the time between detection of Barker words. The elapsed time interval between the previously and presently received data words is added to the stored time interval of all previously received data words. If at least three of the received data words have corresponding stored time intervals that are correlated with predetermined time interval ranges, a correlation indication signal is provided to indicate that valid data words have been received. The inventive method and detector may be advantageously utilized in mobile and portable stations of a radio communication system for receiving high speed data on a noisy voice channel.

18 Claims, 6 Drawing Figures